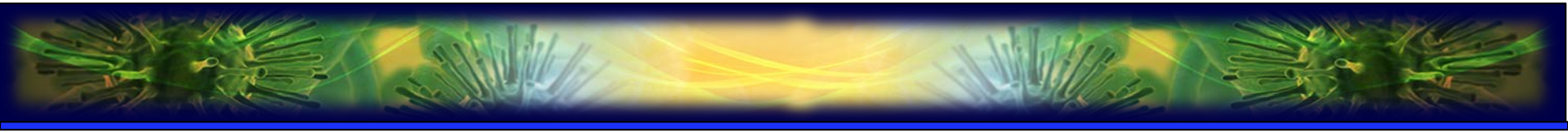
National Aeronautics and Space Administration



NASA V.I.N.E.

Cluster Workshop

Glenn Research Center
March 1, 2017

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Workshop Objectives

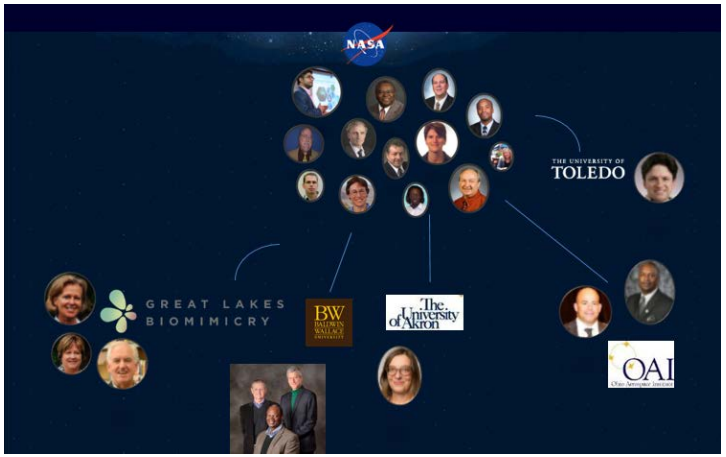
- Understand your role as a Cluster Catalyst
- Understand what is expected of a Cluster and a Catalyst
- Review and discuss the tools available to help you execute your role
- Understand what is needed to prepare for the 2017 Summit (to be held in September 2017)
- Be ready to participate in Summit activities

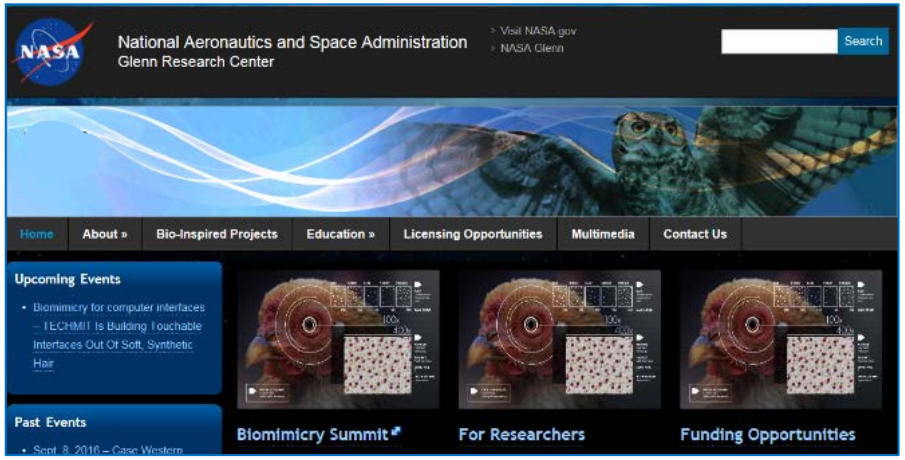
Agenda

- Introduction
- V.I.N.E. - Vision/Mission/Goals/Objectives
- Update on Summit 2017
- Cluster Overview
  - Objectives: SMART Goals
  - Organization
  - Key Roles: RACI Model
- Tools and Timelines
  - Communication Planning
  - Project Planning
  - Charter Worksheet
  - Break out for Collaboration Sessions
- Next Steps

Introduction

V.I.N.E.



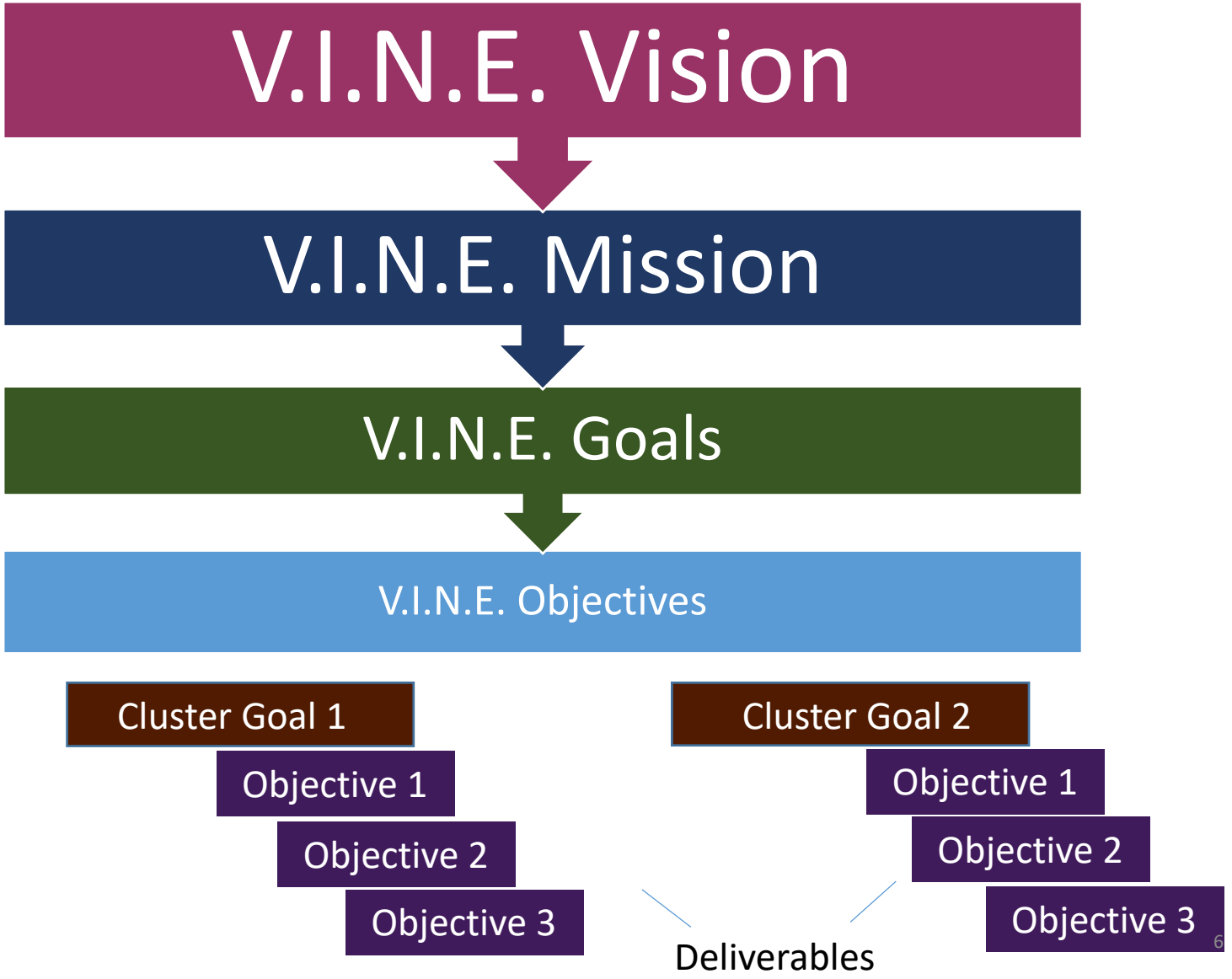


V.I.N.E. - Vision

Vision

To pioneer nature-inspired pathways for the benefit of All.

V.I.N.E. – Vision Map



V.I.N.E. – Mission

Mission

With Biomimicry as its driving framework, V.I.N.E. seeks to help solve NASA's biggest challenges – in collaboration with valued partners from academia, industry, and other government agencies.

Goals

1. Establish clusters of researchers, scientists, engineers, and subject matter experts.
2. Select areas for focused biomimetic exploration and/or application.
3. Establish workspaces (both traditional and virtual) where network partners can connect and collaborate.
4. Convene at least one annual Biomimicry Summit, at a NASA Center or partner meeting space.

Objectives of each V.I.N.E. Technology Cluster:

1. Convene and leverage a diverse network of multi-disciplinary practitioners and experts, with the purpose of utilizing bio-inspired philosophies, tools, and research to benefit NASA, the nation, and the planet.
2. Assess current policies, plans, programs, funds, research, and technology.
3. Recommend steps for future research.
4. Recommend steps to ensure a viable posture for future funding.

Summit 2017 (DRAFT Agenda)

Day 1

- Intro/Welcome/Keynote?
- Federal Agency Perspectives
  - Propulsion
  - Power
  - Communications
  - Materials, Structures and Processes for Extreme Environments
  - Science
- Lunch - Panel Discussion
- *Biomimicry: State of the Art*
  - Tools
  - Media (Journals)
  - Philosophy
- Evening Event –
  - Technology Showcase

Day 2

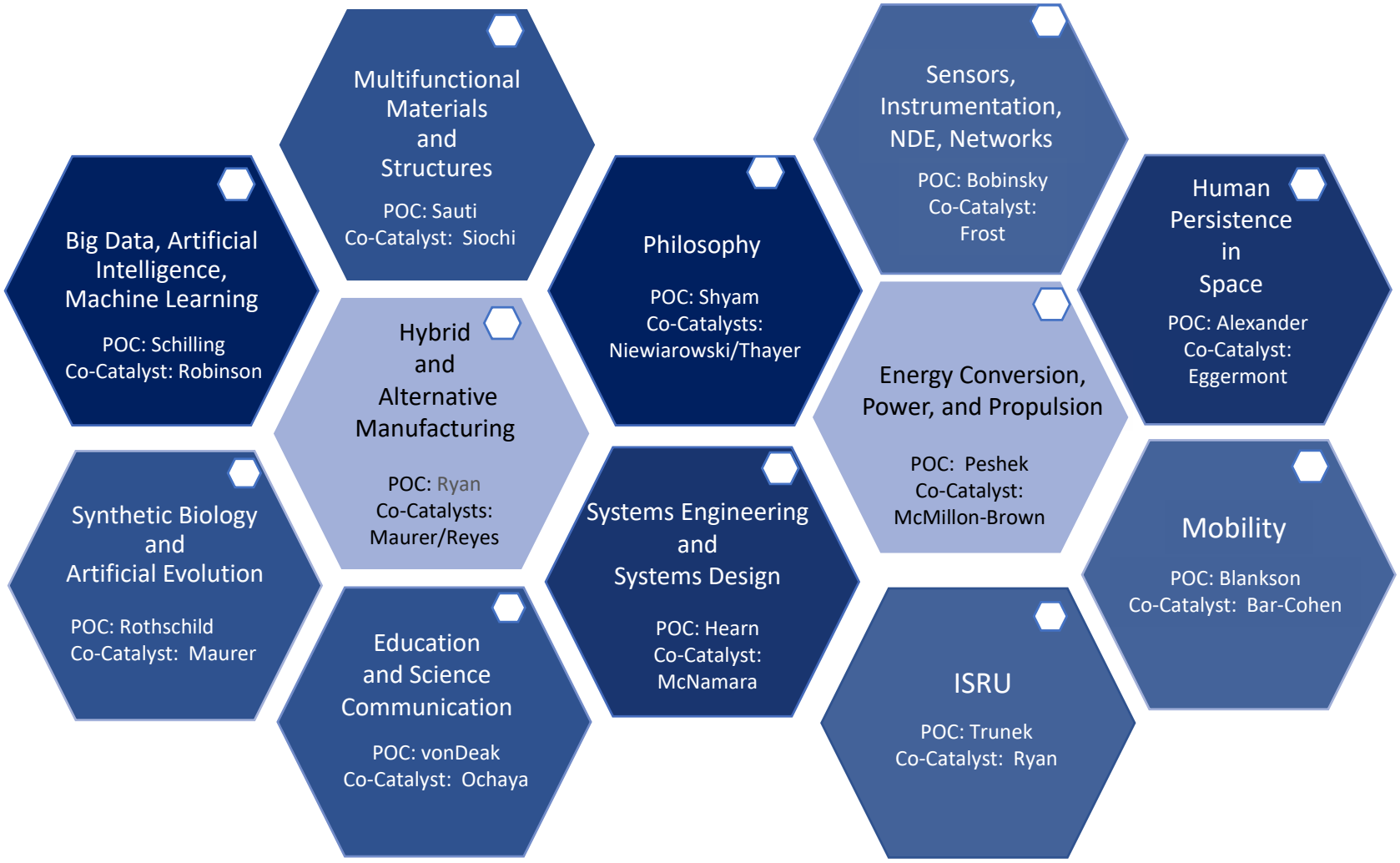
- Themed sessions: *Materials, Structures and Processes for Extreme Environments* –
  - Session 1: Materials Development
  - Session 2: Bio-inspired structures, multifunctional structures – AFOSR
  - Session 3: Manufacturing/ Synthesis – Chris Maurer
  - Session 4: ISRU – Andrew Trunek
- Evening Event –
  - Pecha Kucha
  - Poster Sessions
  - Networking Opportunity

Day 3

- V.I.N.E. Status Update
- V.I.N.E. Report Out
- Afternoon Breakouts –
  - Cluster Working Sessions
  - University of Akron
  - EPSCoR

Options/Outcomes: Traditional PowerPoint Presentation, Video, Poster, White Paper, Literature Review, Portfolio, Cluster Reflection, Steering Committee Reflection, Core Committee Reflection, Quad Chart

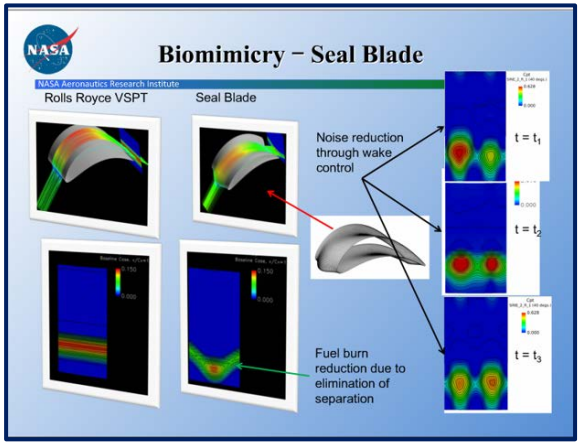
Cluster Overview



Cluster Objectives

Each technology cluster may have a unique set of goals and objectives.

Dragonfly to Mars Entemopter



Seal Whiskers to Turbine Blades

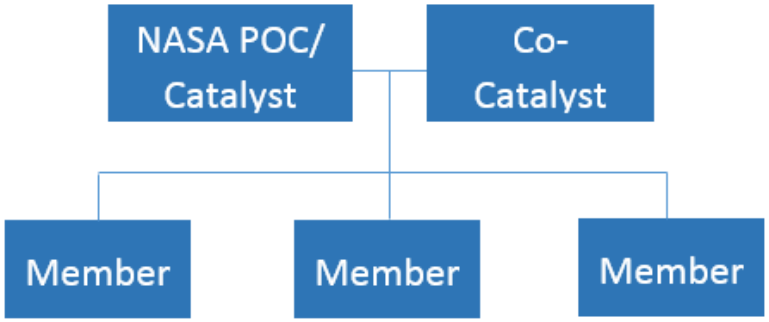
Cluster Objectives

- Discuss and exchange ideas and information on an ongoing basis.
- Convene least three (3) Cluster meetings before June 28th
- Identify 3 – 5 research interest areas (with brief description) by Friday, March 24th
- Identify 3 – 5 funding sources that will enable research to benefit NASA, the nation and the planet by Friday, March 24th
- Research target interest areas
- Collaborate on a guiding document describing what **research** is currently underway, and what **technology** is currently possible, in the area of focus.
- Update the Steering Committee on a regular basis
- Report on research at Annual Summit

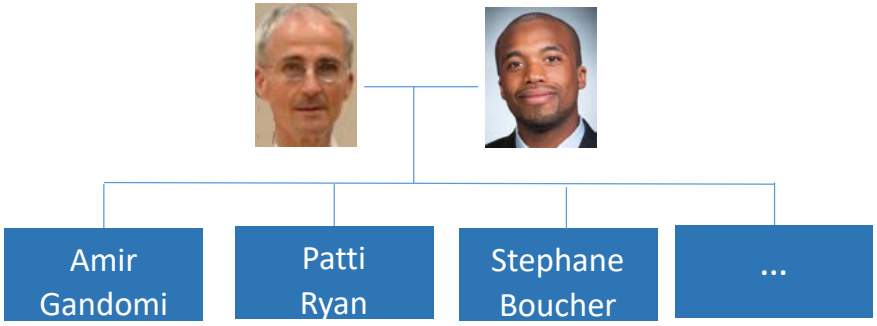
Cluster Organization

V.I.N.E. Clusters are technology teams that wish to push the boundaries of Biomimicry research and organizational philosophy.

Typical Cluster Organization Model



Sample Cluster Organization (Big Data)



Catalysts have specific responsibilities to keep the momentum going and to facilitate the production of any V.I.N.E. Cluster deliverables.

Key Roles … R - A - C - I Model

R A C I

Identify the person(s) who is X or needs to be X …

Responsible
Accountable
Consultative
Informed

Communication Planning

Who	What	When	How
Consider roles	Updates	Regular schedule	Face to Face
	Information	Ad hoc	Phone/Conference Call
	Actions		Virtual Meetings
	Decisions		Email threads
	Direction		Newsletters/News Bulletins
			V.I.N.E. extranet

Note: The Steering Committee will have a regular, standing time for tag-ups. These are noted on the Timeline (p. 17). The tag-ups are optional, but they provide valuable time for sharing information. If you have any questions, or are looking for updates, please join us!

Key Roles … RACI Model

	RACI								
	Cluster Steering Committee	NASA & Non-NASA Catalyst Co-L	Cluster Coordinators	NASA Cluster Members	Non-Cluster Members	Content and Communication	Administrative Support		
Cluster Set Up:									
Select/Invite Cluster Catalysts to lead each Cluster Team	A	R				R			
Formalize the Cluster Team	A	R				R			
Cluster Catalysts Orientation	A	R				R			
Cluster Planning & Assembly:									
Cluster Catalysts assemble Cluster Team – (identify needs, capabilities, important recommended changes)		A	R						
Complete Cluster Team Charter document		A	R						
Identify Team timeline, identify any risks and recommended actions to avoid/mitigate		C	A	R					
Create initial research interests and plans to conduct research as a team			R	R		A			
Team reviews research plan and charter			A	R					
Finalize project plan (to achieve objectives and research interests)	I	I	A	R		I			
Forward Project Plan to Cluster Coordinators			A						
Cluster Coordinators review Project Plans with Program Managers									
Cluster Activity Design:									
Identify target research calls the Cluster Team would like to pursue	C		R	I	R	A			
Collect call requirements – SOW, Call Announcements			R	R	A				
Identify research calls most likely to pursue									
Prepare draft proposal outline as required			R	R	A				
Prepare draft work plan to achieve Cluster Team remaining objectives			R	R	A				
Develop an Implementation Plan – objective related tasks and tactical actions set to a timeline			A	R	R				
			A	R	C				
			A	R					
			A	R					
		I	A	R	I	I	C		
Cluster Research, Analysis and Report :									
Status Implementation Plan progress at 30% (timeline)			A	R					
Cluster Team report progress			A	R				R	
Cluster Team adjustments as required			A	R					
			A	R					

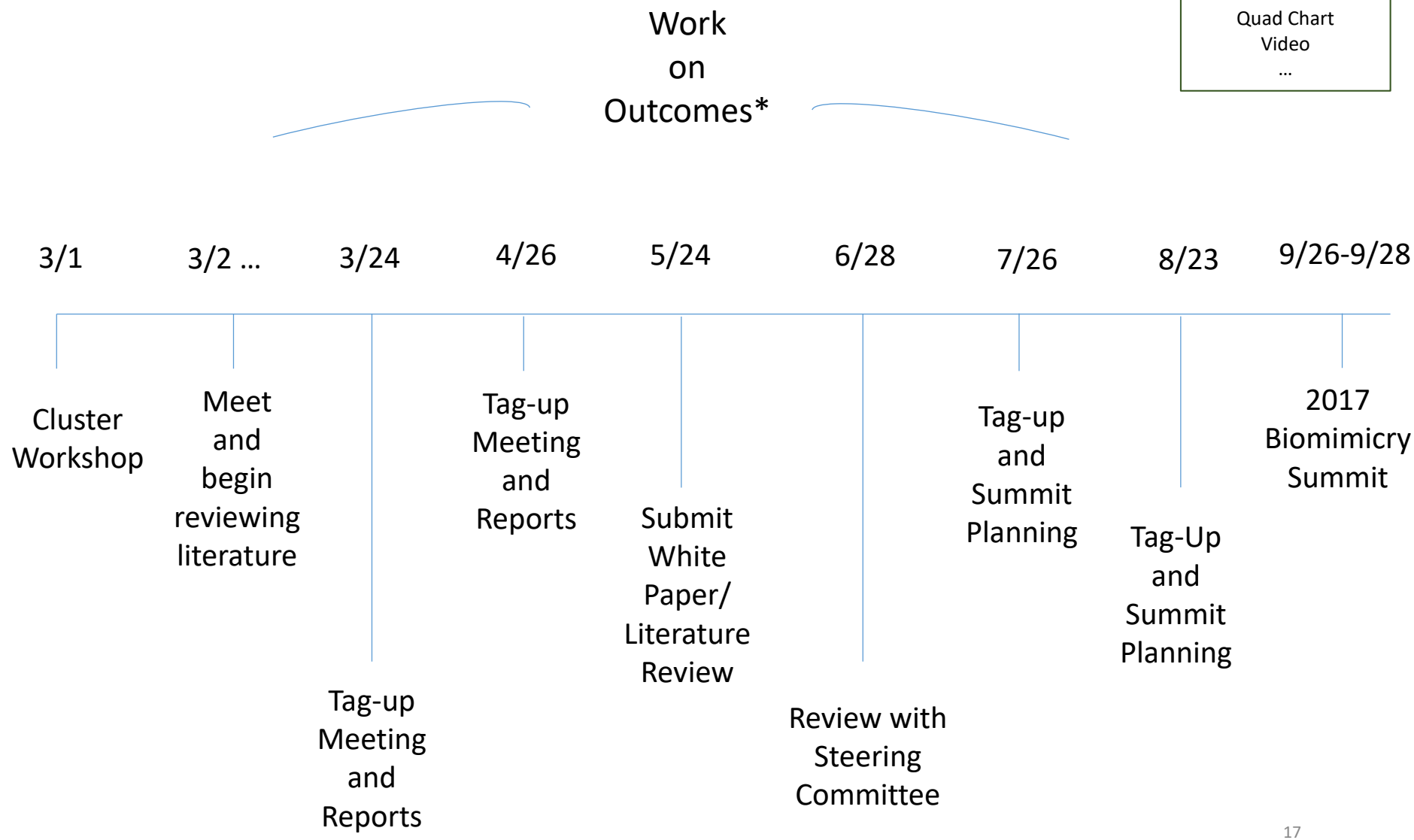
Licensing Agreement

- Licensed Rights
- Intellectual Property
- Intellectual Property Rights
- Questions? Please submit in writing … you will receive a response in writing that you can pass on to your legal representatives.

Project Planning

*Potential Outcomes

Portfolio
Presentation
White Paper
Literature Review
Poster
Quad Chart
Video
…



Key Deliverables

Description	Deliver to …	Due Date
Statement: 3 - 5 research interest areas (with brief description)	Steering Committee	Friday, March 24
Grid: 3 - 5 funding sources that will enable research to benefit NASA, the nation and the planet	Steering Committee	Friday, March 24
Choice of Outcome	Steering Committee	Friday, March 24
Due Date: Draft of Outcome	Content Committee	Friday, May 26
Steering Committee Review		May 26 – June 16
Final Submission for Summit 2017	Content Committee	Friday, July 21
Summit 2017	All	September 13-15

Charter Worksheet

NASA Technology Cluster Charter - 2017 (Name - Cluster Lead)

Technology Cluster :	Cluster Team			
Description (why do we need to do it) (Brief description of what this Cluster will be about - state research interests)	*Name*	*Organization*	*Role*	Phone/Email
			Sponsor	
			Team Leader	
			Facilitator (Optional)	
Goal Statement(s) (what the objective is) (WHAT DO WE WANT TO ACHIEVE IN 2017) (WHAT DO WE WANTO TO EXPLORE)				
Scope				
Includes:				
	Pre-work Needed to Ensure Hitting our Technology Goals			
Excludes:				

Next Steps